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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/755,034	01/08/2004	Ming H. Wu	MEM-0003-P	7883

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EXAMINER

MORILLO, JANEL COMBS

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/755,034

Applicant(s)

WU, MING H.

Examiner

Janelle Combs-Morillo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) 26-49 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/12/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-25, drawn to a Ti alloy composition, classified in class 420, subclass 418.
 - II. Claims 26-49, drawn to a method of heat treating and working a Ti alloy, classified in class 148, subclass 671.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by a materially different process such as hot working.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with David Rodrigues on June 2, 2005 a provisional election was made with traverse to prosecute the invention of group I, claims 1-25. Affirmation of this election must be made by applicant in replying to this Office action. Claims 26-49 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 9-16, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Schetky et al (US 6,258,182).

Schetky teaches examples within the instant Mo_{eq} range in Table III, alloys 27 ($Mo_{eq}=10.45$), 28 ($Mo_{eq}=9.22$), and 36 ($Mo_{eq}=9.4$). Schetky teaches said alloy has a beta phase (abstract), has linear elastic properties (column 4 line 16), pseudoelastic properties (column 3 line 14), superelastic properties (column 3 lines 27-28), and has a martensitic structure (abstract). Because Schetky teaches examples of a Ti alloy with a Mo_{eq} amount that falls within the instant range, and wherein said alloy exhibits superelastic and pseudoelastic properties, it is held that Schetky anticipates the presently claimed invention.

Concerning the process limitations of independent claim 2, Schetky teaches cold working a wire up to 20% reduction and heat treating at typically 780-880°C (column 8 lines 36-40), which meets the presently claimed product by process limitations.

Concerning claim 3, the alloy taught by Schetky meets the presently claimed relationship, as determined by the instant the equation for said Mo_{eq} in claim 3 (see above reference to examples 27, 28, and 36).

Concerning claim 9, as stated above, Schetky teaches a beta phase titanium alloy preferably comprising: 10-12% Mo, 2.8-4% Al, 0-2% Cr, and 0-4% Nb (see abstract).

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Concerning claims 10-16, because Schetky teaches a substantially overlapping alloy composition, processed in a substantially similar method, then substantially the same properties, such as elastic recovery are inherently present. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). “When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.” *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present.

Concerning claim 24, Schetky teaches said alloy is manufactured into a variety of useful articles, such as medical devices (abstract).

Because the prior art teaches examples within the presently claimed alloying ranges, as well as a substantially identical product by process, it is held that Schetky anticipates the presently claimed invention.

Claim Rejections - 35 USC § 102/103

7. Claims 1-3, 9-16, 24 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP’241 or Sagoi.

JP’241 teaches examples of a Ti alloy within the instant Mo_{eq} range of instant claim 1 (JP’241 at Table I): alloy A (Mo_{eq}=8.82), D (Mo_{eq}=10), E (Mo_{eq}=10.32), I (Mo_{eq}=9.68), N (Mo_{eq}=9.72), wherein said alloy comprises: 2-5% Al, 1-9% Mo, 6.1-9.0% Cr, balance Ti

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(abstract).

Sagoi teaches a Ti based alloy comprising 2-5% Al, 1-9% Mo, 6.1-9% Cr, balance Ti (abstract). Sagoi further teaches examples in Table 1 within the presently claimed Mo_{eq} range of instant claim 1 (Sagoi at Table I) including example 10 ($Mo_{eq}=10.16$). Sagoi teaches heat treating and working said alloys to form a β phase structure, or an $\alpha+\beta$ phase structure (column 2 lines 39-55).

Though neither JP'241 nor Sagoi teach said alloy is superelastic or pseudoelastic, because the alloys taught by the prior art substantially overlap the presently claimed Mo_{eq} and are processed in a substantially similar heat treating method, then substantially the same properties, such as elasticity are expected to occur for JP'241 or Sagoi, as in the instant invention. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims (such as superelastic or pseudoelastic behavior) is necessarily present.

Because the prior art teaches examples within the presently claimed alloying ranges, and wherein said prior art alloy appears to be substantially identical to the presently claimed alloy product, it is held that JP'241 or Sagoi anticipates, or on the alternative, has created a prima facie case of obviousness, of the presently claimed invention.

Concerning the instant product by process limitations for claim 2 as well as the phase structure of claim 9, JP'241 teaches heating to $\sim 800^{\circ}\text{C}$ (see Table 1). Sagoi teaches solution

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heating 760-800°C to achieve a beta phase structure or alpha + beta (column 2 lines 39-45).

Neither JP'241 nor Sagoi teach cold working (which is optional in instant claim 2). However, with regard to the process step of cold working, it is well settled that a product-by-process claim defines a product, and that when the prior art discloses a product substantially the same as that being claimed, differing only in the manner by which it is made, the burden falls to applicant to show that any process steps associated therewith result in a product materially different from that disclosed in the prior art. See MPEP 2113, *In re Brown* (173 USPQ 685) and *In re Fessman* (180 USPQ 524) *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292.

Concerning claim 3, the alloy taught by JP'241 or Sagoi meets the presently claimed relationship, as determined by the instant the equation for said Mo_{eq} in claim 3 (see above reference to examples of JP'241 or Sagoi).

Concerning claims 10-16, because JP'241 or Sagoi teaches a substantially overlapping alloy composition, processed in a substantially similar method, then substantially the same properties, such as elastic recovery are inherently present (see above discussion).

Concerning claim 24, JP'241 teaches said alloy can be made into various articles such as a steam turbine blade (abstract). Sagoi also teaches said alloy can be made into turbine blades (abstract).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 4-8, 17-23, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schetky et al (US 6,258,182), as applied to claims above.

As stated above, Schetky teaches examples of a superelastic and pseudoelastic Ti alloy with a Mo_{eq} amount that falls within the instant range.

Concerning claim 4, Schetky teaches a beta phase titanium alloy preferably comprising: 10-12% Mo, 2.8-4% Al, 0-2% Cr, and 0-4% Nb (see abstract). While the preferred range taught by Schetky does not overlap the alloys of claim 4, the alloy of claim 4 falls within the scope of the limits of Mo, Al, Cr, V, and Nb listed in the examples of Schetky in Table III columns 7 and 8, wherein said examples encompass: 8.4-12% Mo, 2.3-3.7% Al, 0-1.8% Cr, 0-1.8% V, 0-3.8% Nb. Overlapping ranges have been held to be a prima facie case of obviousness, see MPEP § 2144.05. It would have been obvious to one of ordinary skill in the art to select any portion of the range, including the claimed range, from the broader range disclosed in the prior art, because the prior art finds that said composition in the entire disclosed range has a suitable utility.

Concerning the process limitations of product by process claims 5-8, Schetky teaches cold working a wire up to 20% reduction, further heat treatment including solution heat treating 780-880°C for typically 30 minutes (column 12 line 60), which overlaps the presently claimed

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heat treatment time and temperatures. Said solution heat treatment temperature taught by Schetky overlaps heating above the beta transus. Though Schetky does not teach a product produced by solution heating below the beta transus, the temperature range of solution heating given by Schetky overlaps the solution heat treatment range given in the instant specification typical of below the transus temperature (see [0056]).

Concerning claims 17-23, because Schetky teaches a substantially overlapping alloy composition, processed in a substantially similar method, then substantially the same properties, such as elastic recovery is expected to be present. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present.

Concerning claim 25, Schetky teaches said alloy is manufactured into a variety of useful articles, such as medical devices (abstract).

Double Patenting

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686

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F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 1-25 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-52 of copending Application No. 10/609004. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of US'004 are also drawn to a composition with 8-10% Mo, 2.8-6% Al, up to 2% V, up to 4% Nb, balance Ti; wherein said alloy is produced by solution heating, cold working, cooling in air (US'004 at cl. 2, 39, 43). The Mo_{eq} of said alloy taught by the claims of US'004 meets the Mo_{eq} given in instant claims 1 and 3.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

12. Claims 1-25 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 15-24 of copending Application No. 10/869359. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of US'359 are drawn to an overlapping alloy composition with 8-12% Mo, 2.8-6% Al, up to 2% V, up to 4% Nb, balance Ti (US'359 at cl. 17), wherein said alloy is produced an identical process of heat treating and cold working (US'359 at cl. 15, 18). The Mo_{eq} of said alloy taught by claims 15, 16, 18, and 19 of US'359 meets the Mo_{eq} given in instant claims 1 and 3.

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This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

13. Claims 1-25 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-25 of copending Application No. 10/609003. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of US'003 are drawn to an overlapping alloy composition with 8-10% Mo, 2.8-6% Al, up to 2% V, up to 4% Nb, balance Ti (US'003 at cl. 1), wherein said alloy is produced a process of heat treating and cold working (US'003 at cl. 2, 12). The Mo_{eq} of said alloy taught by the alloy of claims of US'003 meets the Mo_{eq} given in instant claims 1 and 3.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

14. Claims 1-25 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims of copending Application No. 10/755085. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of US'085 are drawn to an overlapping alloy composition with 8-10% Mo, 2.8-6% Al, up to 2% V, up to 4% Nb, balance Ti (US'085 at cl. 3), produced an identical process of solution heating, cold working, cooling in air, aging 350-550°C (US'085 at cl. 4, 45). The Mo_{eq} of said alloy taught by the alloy of claims of US'085 meets the Mo_{eq} given in instant claims 1 and 3.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.


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Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (571) 272-1240. The examiner can normally be reached on 8:30 am- 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


GEORGE WYSZOMIERSKI
PRIMARY EXAMINER
GROUP 1700

JCM

June 8, 2005